CLAIMS

What is claimed is:

1. A one-piece anastomosis device for connecting a graft vessel to a target vessel, comprising:

a body formed from superelastic material, said body deformable from a constrained configuration to an unconstrained configuration; wherein in said unconstrained configuration said body includes at the distal end thereof a plurality of inner flange members forming an inner flange and includes at the proximal end thereof a plurality of outer flange members forming an outer flange; and wherein at least a portion of said body between said inner flange and said outer flange has substantially the same diameter in both said constrained configuration and said unconstrained configuration.

2. The anastomosis device of claim 1, wherein said portion of said body between said inner flange and said outer flange that maintains a substantially constant diameter in both said constrained configuration and said unconstrained configuration includes a substantially rigid ring.

3. The anastomosis device of claim 1, wherein at least one of said inner flange members is substantially blunt.

4. The anastomosis device of claim 1, wherein at least one of said outer flange members is substantially blunt.

5. The anastomosis device of claim 1, wherein at least one of said inner flange members substantially does not pierce the target vessel when said body is in the unconstrained configuration.

6. The anastomosis device of claim 1, wherein at least one of said outer flange members substantially does not pierce the target vessel when said body is in the unconstrained configuration.

7. The anastomosis device of claim 1, wherein said superelastic material is nickel-titanium alloy.

8. The anastomosis device of claim 1, wherein at least one said inner flange member is substantially radially offset from at least one said outer flange member.

9. The anastomosis device of claim 1, wherein the number of said inner flange members is equal to the number of said outer flange members.

10. An anastomosis device for connecting a graft vessel to a target vessel, comprising:

a substantially continuous ring, wherein the diameter of said ring is substantially fixed;

a plurality of inner flange members extending from said ring; and

a plurality of outer flange members extending from said ring.

11. The anastomosis device of claim 10, wherein said ring, said inner flange members and said outer flange members are composed of superelastic material.

12. The anastomosis device of claim 10, wherein at least one said inner flange member is substantially radially offset from at least one said outer flange member.

13. The anastomosis device of claim 10, wherein the number of said inner flange members is equal to the number of said outer flange members.

14. The anastomosis device of claim 10, wherein at least one of said inner flange members is substantially blunt.

15. The anastomosis device of claim 10, wherein at least one of said outer flange members is substantially blunt.

16. An anastomosis device for connecting a graft vessel to a target vessel, comprising:

a open central structure;

a plurality of first flange members extending from said central structure and movable from an insertion state to an expanded state; and

a plurality of second flange members extending from said central structure and movable from an insertion state to an expanded state, at least one said second flange member having a free end; wherein at least one said free end is oriented generally toward at least one said first flange member when said first flange members and said second flange members are in said expanded state.

17. The anastomosis device of claim 16, wherein at least one said free end is pointed, whereby said pointed free end penetrates the target vessel.

18. The anastomosis device of claim 16, wherein at least one said free end is pointed, whereby said pointed free end penetrates the graft vessel.

19. The anastomosis device of claim 16, wherein at least one said free end is angled relative to a remainder of the corresponding said second flange member.

20. The anastomosis device of claim 16, wherein said central structure has a substantially fixed perimeter.

21. The anastomosis device of claim 16, wherein said central structure is a substantially rigid ring.

22. The anastomosis device of claim 10, wherein at least one said first flange member is substantially radially offset from at least one said second flange member.

23. The anastomosis device of claim 10, wherein the number of said first flange members is equal to the number of said second flange members.